

ADDITIONAL INFORMATION

FUELS FACTS



Fuel Facts

Some facts about vehicle fuels and their effects:

- Alternative fuels are defined in the federal **Energy Policy Act of 1992** as vehicle fuels that are substantially derived from sources other than petroleum and provide energy-security and environmental benefits. Examples include propane, natural gas, ethanol, methanol, and electricity.
- **American Petroleum Institute** figures show that in 1999 oil imports exceeded 45 percent of the petroleum consumed in the United States. The United States spends about \$67 billion a year on imported oil. Imports are expected to grow to nearly 64 percent by 2020. Domestic oil production has declined since 1980, taking with it almost 500,000 jobs.
- According to the **U.S. Department of Energy**, emissions from the 280 million cars, trucks, and buses in this country account for about half of all air pollution (on the average).
- A Harvard University study estimated that about 5.8 percent of deaths in the typical polluted American city each year are linked to acidic particles in the air.
- Nearly half of all Texans—some 10.6 million people—face risks from breathing unhealthy air, says the **American Lung Association** of Texas.
- In 1999, vehicles traveled a total of 208 billion miles on Texas streets, roads, and highways, according to the **Texas Department of Transportation**.
- The **Texas Natural Resource Conservation Commission** issues ozone action advisories for Austin, Corpus Christi, Marshall/Longview, San Antonio, and Victoria. The City of Houston, Dallas/Fort Worth, Beaumont-Port Arthur, and El Paso issue their own daily ozone forecast.
- The most commonly available alternative fuels are currently propane, natural gas (compressed or liquefied), ethanol, methanol, and electricity. All of these energy sources are produced almost exclusively on this continent, says the U.S. Department of Energy.
- Alternative fuels power 418,128 vehicles in the U.S., according to the U.S. Department of Energy. Other countries with a substantial percentage of their vehicles using alternative fuels include Japan, Italy, Brazil, The Netherlands, Australia, Great Britain and Canada.
- Some alternative fuels (such as corn-based ethanol) are made from renewable resources.
- Some alternative fuels are fossil-fuel based (such as natural gas) but come from reserves larger than our petroleum reserves.
- Congress has enacted a five-year federal income tax break of \$2,000-\$5,000 for drivers who buy or convert to alternative fuel vehicles. Owners of large, **heavy-duty vehicles** can qualify for up to \$50,000 in tax credits and up to \$100,000 for the installation of a refueling facility.
- **Material Safety Data Sheets** (MSDS) from the manufacturers show that raw gasoline contains compounds that are suspected to cause cancer, as well as toxins dangerous to human health and to the environment if spilled. Others are dangerous if breathed or swallowed but have not been shown to cause cancer, according to MSDS.



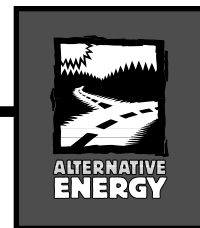
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- Propane's carbon steel tanks are made to the standards of the **American Society of Mechanical Engineers** (ASME) and are many times more puncture-resistant than typical gasoline and diesel tanks. CNG tanks also must be made to ASME standards.
- Alternative fuels typically cut emissions of ozone-forming substances. Vehicles powered solely by alternative fuels are exempt from tailpipe emissions inspections mandated by the federal **Clean Air Act**.
- Though emissions reductions vary among the types of alternative fuels, all produce less smoky exhaust, carbon monoxide, and compounds that cause smog. For example, a **Southwest Research Institute** chemical analysis of exhaust from a propane-fueled car showed that the hydrocarbons in propane exhaust form only 30 to 40 percent as much low-level ozone (smog) as the hydrocarbons in gasoline exhaust. Tests were done using a wide range of fuel systems and available fuel blends. The analysis also showed that propane cuts emissions of toxins and carcinogens like benzene and toluene by up to 96 percent when compared to gasoline.
- Nationally, the total health cost of air pollution ranges between \$40-60 billion and leads to about 60,00 premature deaths annually, according to the **American Lung Association**.
- There are fewer refueling stations for alternative fuels than for conventional fuels.
- According to the **American Lung Association**, exposure to ozone may cause or aggravate lung diseases such as asthma, chronic bronchitis, and emphysema. Ozone can cause chest pains, coughing and wheezing in susceptible people, as well as aggravate allergies and reduce growing children's lung capacity.
- Some alternative fuels reduce the need for routine maintenance such as oil changes and can double the useful life of an engine because they burn cleaner than conventional fuels.
- Industry price reports show that some alternative fuels are cheaper than gasoline and diesel, but others are more expensive.
- **Texas Railroad Commission** records show that dozens of school districts across Texas have switched to alternative fuels for their buses.
- Gasoline vehicles must be mechanically changed so they can use alternative fuels. Costs vary widely. The electric minivan available from Ford costs several times more than a comparable gasoline minivan, while ethanol vehicle costs are slightly higher than gasoline due to special fittings, according to a U.S. Department of Energy survey.
- Ozone (O₃) is the principal constituent of the brownish haze we call smog. Ozone is formed when volatile organic compounds and nitrogen oxides (known as VOCs and NO_x for short) react in sunlight, according to the **Texas Natural Resource Conservation Commission**.

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- **The National Renewable Energy Laboratory** describes a digester as a closed, nearly odorless system that uses naturally occurring microorganisms to convert waste, including trash from landfills and various wastes and sludges, into a fuel gas that is 55 percent methane and 45 percent carbon dioxide. The gas can be used for heat, to run a turbine to generate electricity, or as a transportation fuel.
- **The U.S. Department of Energy** estimates that there is enough biomass in this country to supply a significant portion of U.S. energy needs. Biomass could generate as much as \$20 billion a year in new income for American farmers and rural communities, while reducing greenhouse gas emissions by up to 100 million tons a year, the equivalent of taking 70 million cars off the road.
- **The U.S. Department of Energy's** online Alternative Fuel Refueling Station Locator takes the guesswork out of finding fuel needed by the thousands of alternative fuel vehicles on the road today in the United States. The URL is <http://www.afdc.doe.gov/refueling.html>.
- With the **National Propane Gas Association** leading the way, Congress passed the Propane Education and Research Act in 1996. The program is funded by fees collected from propane marketers.